

**FIG. 1**

USER'S WIRELESS DEVICE 100

<b>BROWSER 102</b>
<b>UPDATE PRIVACY FEATURES:</b>
<b>(1) UPDATE YOUR PRIVACY PROFILE</b>
(a) Add a local program to permissions list
(b) Remove a local program from list
(c) Add a server program to permissions list
(d) Remove a server program from list
(e) Add a network program to permissions list
(f) Remove a network program from list
<b>(2) UPDATE YOUR PERSONAL DATA</b>
(a) Update server database
(b) Update network database
<b>KEYPAD 104</b>
<b>POSITIONING SENSOR 122</b>
<b>TOUCH SENSOR 124</b>
<b>COMPASS SENSOR 126</b>
<b>AMBIENT LIGHT SENSOR 128</b>
<b>AMBIENT TEMPERATURE SENSOR 132</b>
<b>THREE-AXIS ACCELERATION SENSOR 134</b>

FIG. 1A

USER'S WIRELESS DEVICE 100

<b>BROWSER 102</b>
<b>UPDATE PRIVACY FEATURES:</b>
<b>(3) AUTHENTICATE A PROGRAM</b>
(a) Request program's public key certificate
(b) Verify certificate signatures
(c) Verify validity time
(d) Verify revocation status
(e) Check if certificate authority is on trust list
(f) Flag program as authenticated
<b>(4) REGISTER A PROGRAM</b>
(a) When can the accesses take place
(b) What data can be accessed
<b>KEYPAD 104</b>
<b>POSITIONING SENSOR 122</b>
<b>TOUCH SENSOR 124</b>
<b>COMPASS SENSOR 126</b>
<b>AMBIENT LIGHT SENSOR 128</b>
<b>AMBIENT TEMPERATURE SENSOR 132</b>
<b>THREE-AXIS ACCELERATION SENSOR 134</b>

FIG. 1B

USER'S WIRELESS DEVICE 100

<b>BROWSER 102</b>
<b>MANAGE CONTEXT-ACTIVITY PROFILE:</b>
<b>(1) AUTOMOBILE</b>
(a) day time radio preferences
(b) night time radio preferences
(c) map display preferences
(d) service station preferences
<b>(2) DINING</b>
(a) restaurant preferences
(b) food preferences
<b>KEYPAD 104</b>
<b>POSITIONING SENSOR 122</b>
<b>TOUCH SENSOR 124</b>
<b>COMPASS SENSOR 126</b>
<b>AMBIENT LIGHT SENSOR 128</b>
<b>AMBIENT TEMPERATURE SENSOR 132</b>
<b>THREE-AXIS ACCELERATION SENSOR 134</b>

FIG. 1C

USER'S WIRELESS DEVICE 100

<b>BROWSER 102</b>
<b>MANAGE CONTEXT-ACTIVITY PROFILE:</b>
<b>(3) ENTERTAINMENT</b>
(a) movie preferences
(b) sports preferences
<b>(4) TRAVEL</b>
(a) weather forecasts
(b) airline preferences
(c) hotel preferences
(d) car rental preferences
<b>KEYPAD 104</b>
<b>POSITIONING SENSOR 122</b>
<b>TOUCH SENSOR 124</b>
<b>COMPASS SENSOR 126</b>
<b>AMBIENT LIGHT SENSOR 128</b>
<b>AMBIENT TEMPERATURE SENSOR 132</b>
<b>THREE-AXIS ACCELERATION SENSOR 134</b>

FIG. 1D

USER'S WIRELESS DEVICE 100

<b>BROWSER 102</b>
<b>REQUEST A RECOMMENDATION:</b>
<b>(3) ENTERTAINMENT ACTIVITIES</b>
(a) request movie recommendation
(b) request sports recommendation
<b>(4) TRAVEL ACTIVITIES</b>
(a) request weather forecasts
(b) request airline recommendation
(c) request hotel recommendation
(d) request car rental recommendation
<b>KEYPAD 104</b>
<b>POSITIONING SENSOR 122</b>
<b>TOUCH SENSOR 124</b>
<b>COMPASS SENSOR 126</b>
<b>AMBIENT LIGHT SENSOR 128</b>
<b>AMBIENT TEMPERATURE SENSOR 132</b>
<b>THREE-AXIS ACCELERATION SENSOR 134</b>

FIG. 1F

USER'S WIRELESS DEVICE 100

<b>BROWSER 102</b>
<b>REQUEST A RECOMMENDATION:</b>
<b>(1) AUTOMOBILE ACTIVITIES</b>
(a) request day time radio recommendation
(b) request night time radio recommendation
(c) request map recommendation
(d) request service station recommendation
<b>(2) DINING ACTIVITIES</b>
(a) request restaurant recommendation
(b) request food recommendation
<b>KEYPAD 104</b>
<b>POSITIONING SENSOR 122</b>
<b>TOUCH SENSOR 124</b>
<b>COMPASS SENSOR 126</b>
<b>AMBIENT LIGHT SENSOR 128</b>
<b>AMBIENT TEMPERATURE SENSOR 132</b>
<b>THREE-AXIS ACCELERATION SENSOR 134</b>

FIG. 1E

USER'S WIRELESS DEVICE 100

BROWSER 102
ACTIVITY: DINING - restaurant CONTEXT: LOCAL TIME: 2001/05/08/8:00 PM LOCATION: Beale Street, Memphis, TN LIGHT LEVEL - Street Lights /Night AMBIENT TEMPERATURE - 22 C SPEED - ACCELERATION - 0 SERVICE RECOMMENDATIONS: Joe's Beef Barbecue Restaurant Elvis' Place The Blues Diner
KEYPAD 104
POSITIONING SENSOR 122
TOUCH SENSOR 124
COMPASS SENSOR 126
AMBIENT LIGHT SENSOR 128
AMBIENT TEMPERATURE SENSOR 132
THREE-AXIS ACCELERATION SENSOR 134

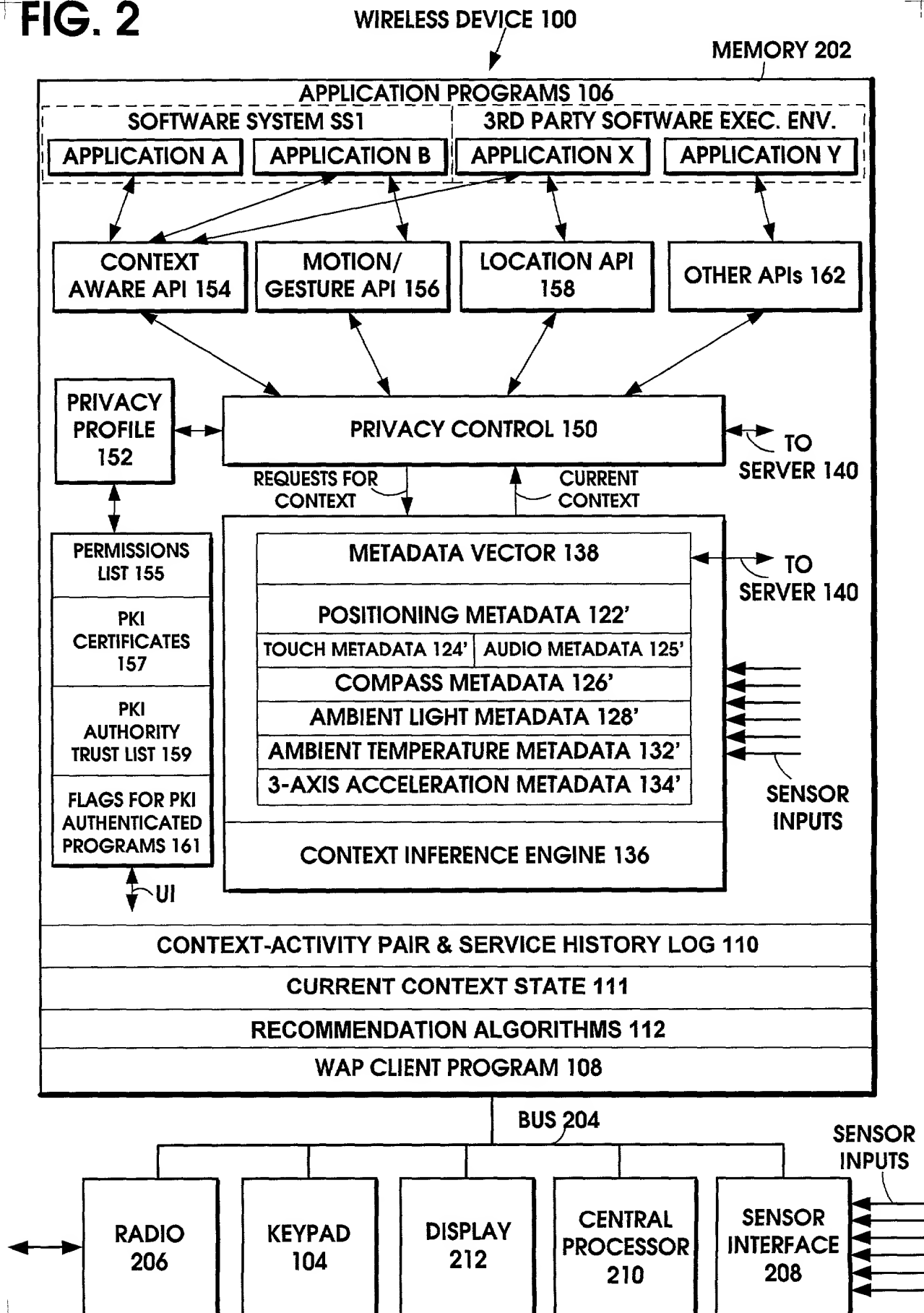
FIG. 1G

USER'S WIRELESS DEVICE 100

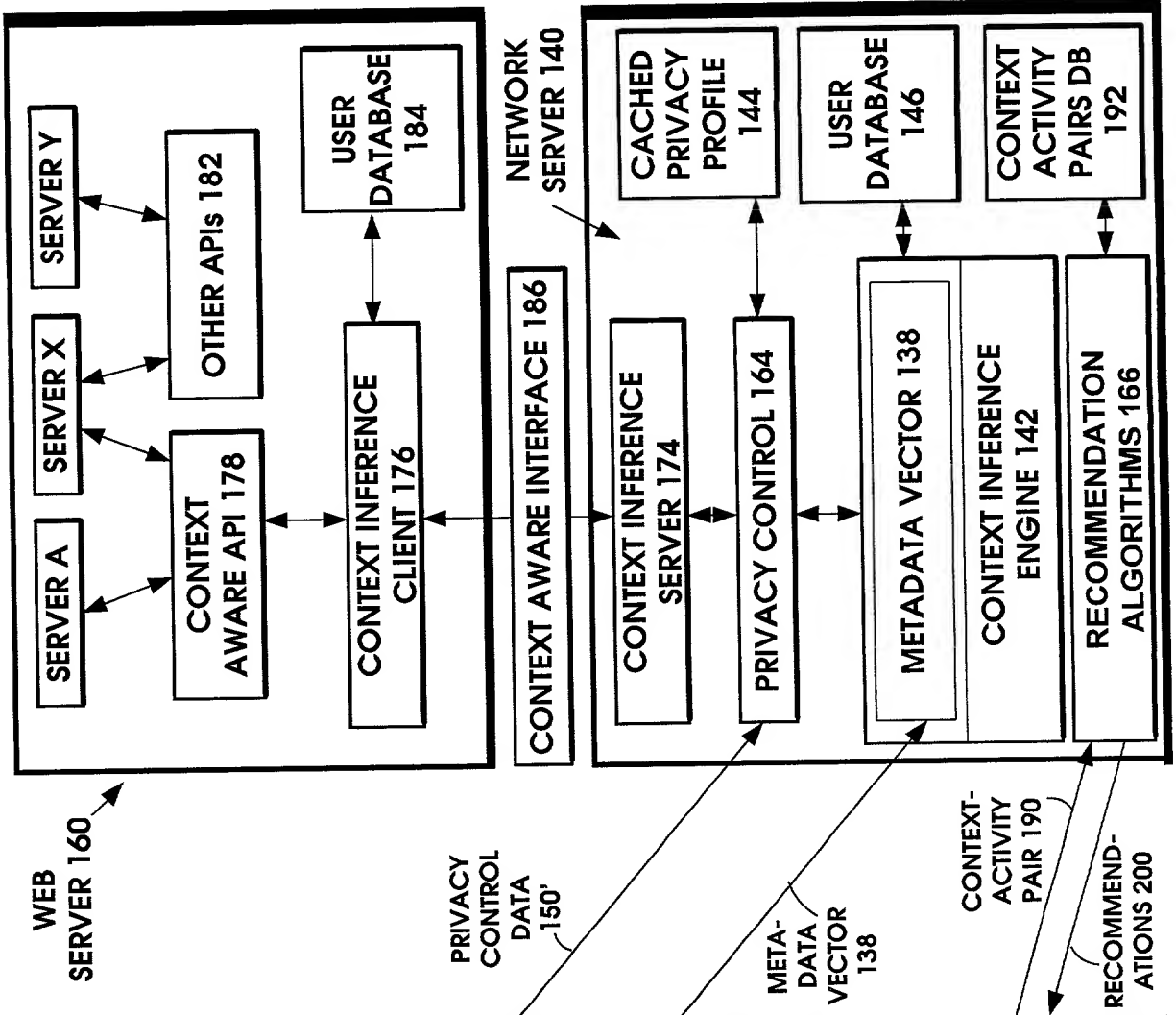
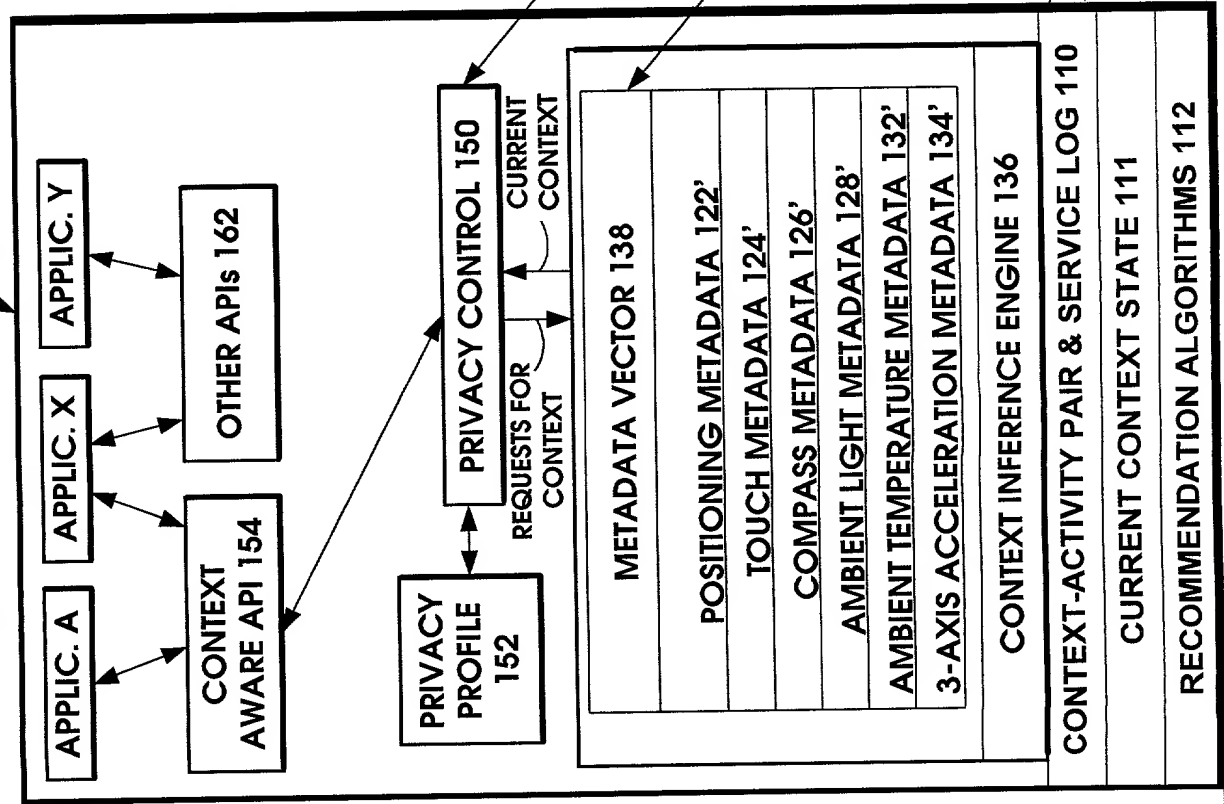
BROWSER 102
ACTIVITY: DINING - restaurant CONTEXT: LOCAL TIME: 2001/06/08/7:30 AM LOCATION: Beale Street, Memphis, TN LIGHT LEVEL - Daylight AMBIENT TEMPERATURE - 16 C SPEED - ACCELERATION - 0 SERVICE RECOMMENDATIONS: Pancake Restaurant Great Start Diner Betty's Homestyle Breakfast
KEYPAD 104
POSITIONING SENSOR 122
TOUCH SENSOR 124
COMPASS SENSOR 126
AMBIENT LIGHT SENSOR 128
AMBIENT TEMPERATURE SENSOR 132
THREE-AXIS ACCELERATION SENSOR 134

FIG. 1H

**FIG. 2**



**FIG. 2A**  
USER'S WIRELESS DEVICE 100



WEB  
SERVER 160

PRIVACY  
CONTROL  
DATA  
150'

META-  
DATA  
VECTOR  
138

CONTEXT-  
ACTIVITY  
PAIR 190

RECOMMEND-  
ATIONS 200

FIG. 3

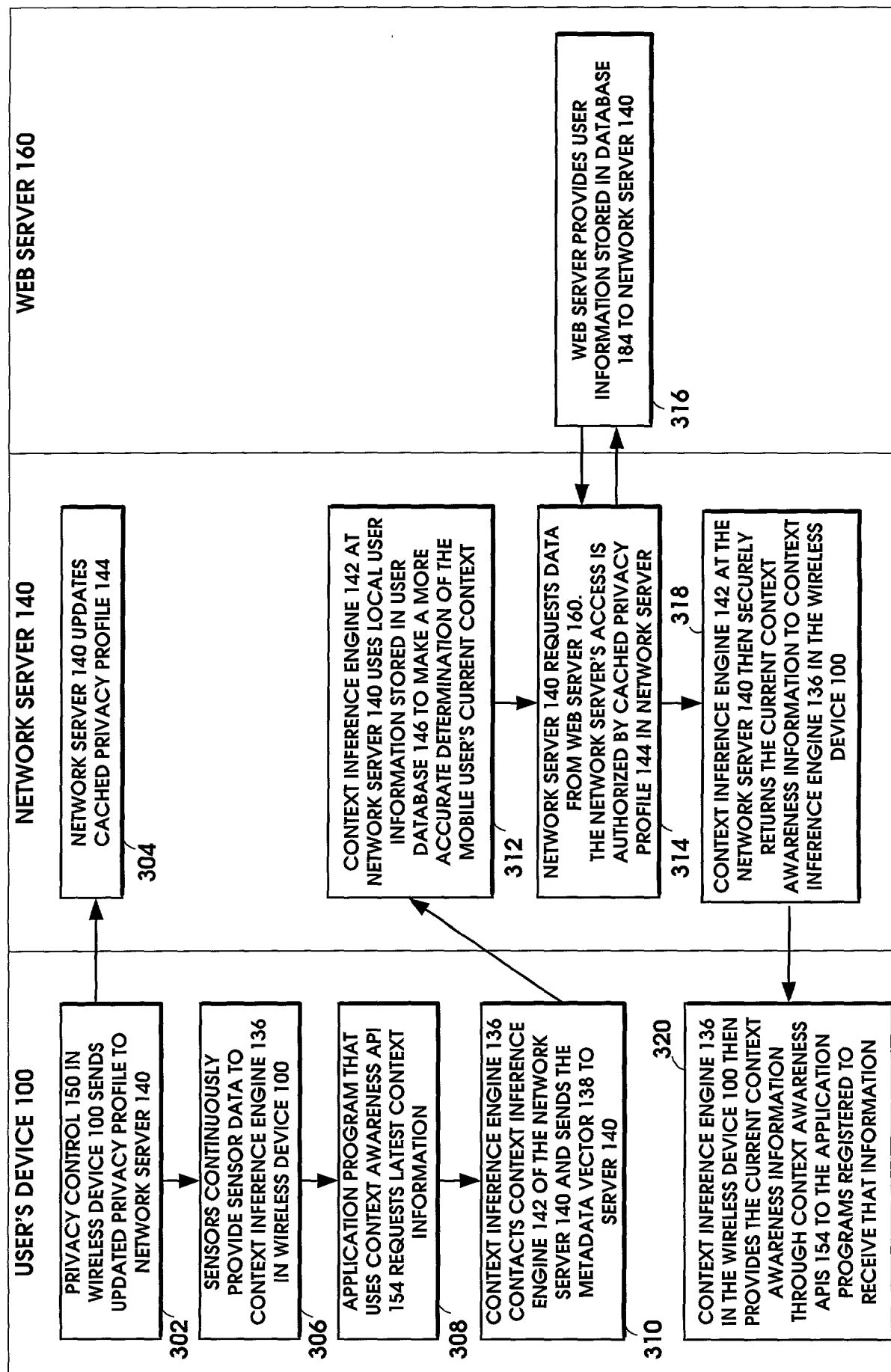




FIG. 3A

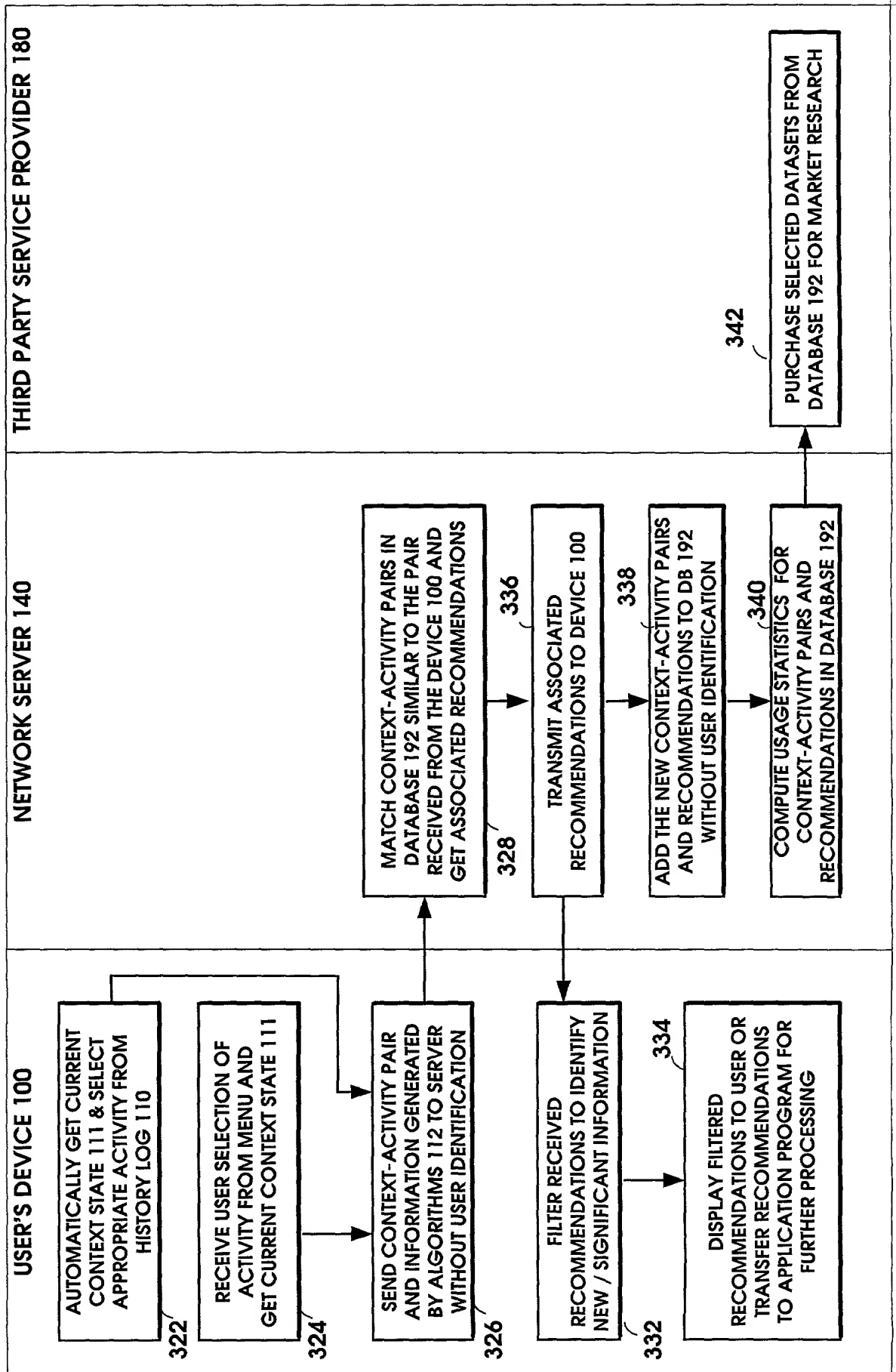


FIG. 3B

CONTEXT-ACTIVITY PAIRS AND SERVICES DATABASE 192 IN SERVER 140		
CONTEXT-ACTIVITY PAIRS	SERVICE RECOMMENDATIONS	NUMBER TIMES RECOMMENDED
<b>ACTIVITY:</b> DINING - restaurant <b>CONTEXT:</b> LOCAL TIME: 6:00 PM - 11:59 PM LOCATION: Beale St, Memphis TN LIGHT LEVEL: Night AMBIENT TEMPERATURE: 15 C - 25 C SPEED - ACCELERATION: 0 - 50 kph	Joe's Beef Barbecue Restaurant  Elvis' Place  The Blues Diner  The Gourmet Restaurant  Dan's Fast Food Restaurant	R=20  R=33  R=18  R=25  R=40
<b>ACTIVITY:</b> DINING - restaurant <b>CONTEXT:</b> LOCAL TIME: 5:00 AM - 10:59 AM LOCATION: Beale St, Memphis TN LIGHT LEVEL: Daylight AMBIENT TEMPERATURE: 15 C - 25 C SPEED - ACCELERATION: 0 - 50 kph	Pancake Restaurant  Great Start Diner  Betty's Homestyle Breakfast  Mike's Quick Breakfasts  Dan's Fast Food Restaurant	R=120  R=100  R=130  R=150  R=120

FIG. 3C

CONTEXT-ACTIVITY PAIRS AND SERVICE HISTORY LOG 110 IN DEVICE 100			RECEIVE BUFFER IN DEVICE 100
CONTEXT-ACTIVITY PAIR HISTORY	HISTORY OF SERVICES USED	RECOMMENDATIONS FROM SERVER	
<b>ACTIVITY:</b> DINING - restaurant  <b>CONTEXT:</b> LOCAL TIME: 6:00 PM - 11:59 PM LOCATION: Beale St, Memphis TN LIGHT LEVEL: Night AMBIENT TEMPERATURE: 15 C - 25 C SPEED - ACCELERATION: 0 - 50 kph	The Gourmet Restaurant (USER'S RATING = 8)	Joe's Beef Barbecue Restaurant	R=20
	Dan's Fast Food Restaurant (USER'S RATING = 6)	Elvis' Place	R=33
		The Blues Diner	R=18
		The Gourmet Restaurant	R=25
		Dan's Fast Food Restaurant	R=40
<b>ACTIVITY:</b> DINING - restaurant  <b>CONTEXT:</b> LOCAL TIME: 5:00 AM - 10:59 AM LOCATION: Beale St, Memphis TN LIGHT LEVEL: Daylight AMBIENT TEMPERATURE: 15 C - 25 C SPEED - ACCELERATION: 0 - 50 kph	Mike's Quick Breakfasts (USER'S RATING = 8)	Pancake Restaurant	R=120
	Dan's Fast Food Restaurant (USER'S RATING = 5)	Great Start Diner	R=100
		Betty's Homestyle Breakfast	R=130
		Mike's Quick Breakfasts	R=150
		Dan's Fast Food Restaurant	R=120

FIG. 3D

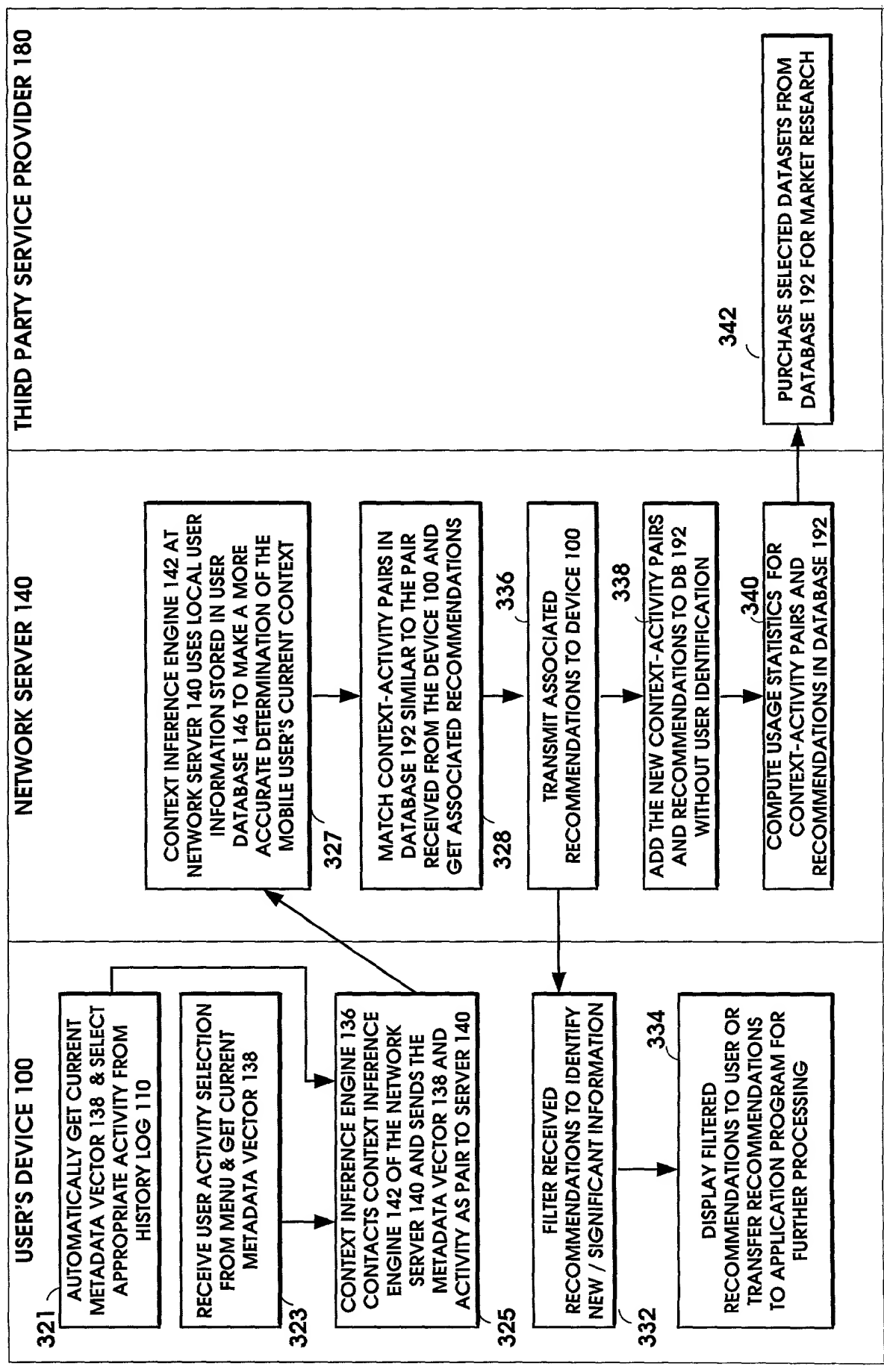
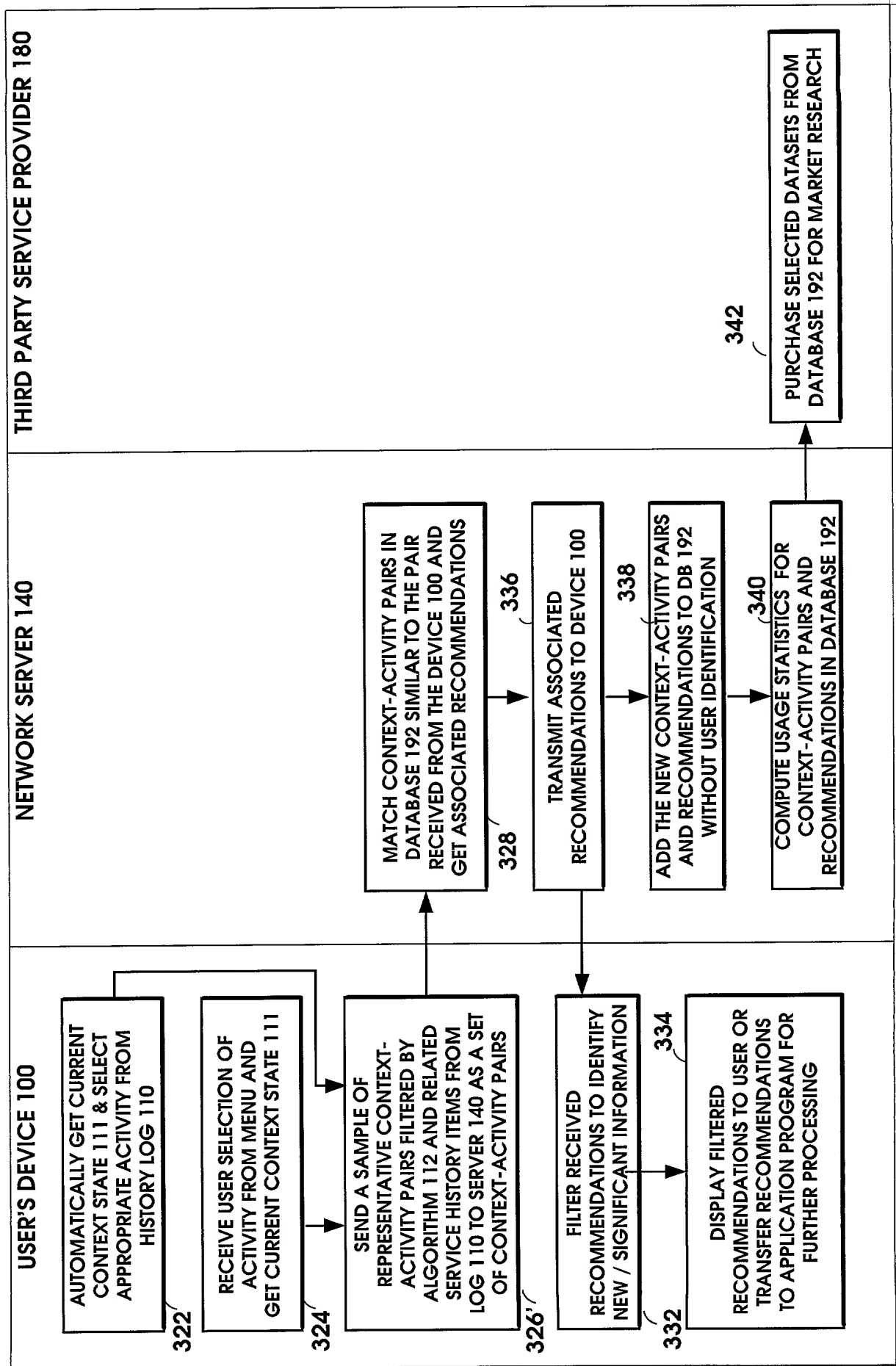


FIG. 3E



**FIG. 4**

